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ARTICLE

Are Philosophers Functionally Integrated Enough to Socially Know?

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Abstract

According to accounts like Alexander Bird's Minimal Functional Account of social knowledge, various groups like those within the sciences can socially know that <*p*>, even if no particular individual within that group knows that <*p*>. Bird's primary example of a group that has such knowledge is the community of semiconductor physicists – which, as he contends, is sufficiently functionally integrated to satisfy accounts like his own. But, what about specialist communities within philosophy? Do they satisfy accounts like Bird's own? Should they? As I will suggest in this article, some of them should, but do not appear to do so – at least, as of yet.

Keywords: social epistemology; functional integration; disagreement; sociology of philosophy; sociology of science

1. Introduction

Many accounts of social knowledge require that, at least, one member or some percentage of a group's members individually know that <*p*> in order for the group to socially know that <*p*> (see Goldman 2004, 2014; Lackey 2016, 2020; Faria 2021).[1] However, according to accounts like Alexander Bird's (2011, 2014) Minimal Functional Account of social knowledge, various groups like those within the sciences can socially know that <*p*>, even if no particular member of that group individually knows that <*p*>.[2] Rather, it is jointly sufficient for them to socially know if:

(1) The members of the group are highly inter-dependent based on a division of labor, epistemic, or otherwise,
(2) The group has a propositional output, <*p*>, based on its various inputs and mechanisms,

[1]Such views have been called "Summativist" accounts of social knowledge. Non-Summativist accounts, on the other hand, do not require either that a member or that a percentage of a group's members individually know in order for the group to socially know – although members might happen to individually know.

[2]For further clarification of Non-Summativist views, see Faria (2022).

(3) Given their inputs, the group's truth-filtering mechanisms are sufficiently reliable so as to provide for their knowing that <*p*>,
(4) And, the output <*p*> can be used as an input for (a) social actions or for (b) social cognitive structures (including the very same structure) (Adapted from Bird 2011, p. 39–49).[3]

Or, more simply, a group socially knows that <*p*> if it is *sufficiently functionally integrated,* given the interplay between the previous parameters, so as to provide for its socially knowing that <*p*>. And thus, for instance, such claims as the following would hold truthfully of those groups: "given their collective resources and institutional structures, they know that <this device works for *x, y, z . . . n* reasons>" or "given our collective resources and institutional structures, we know that <explanations *x, y, z . . . n* fail because of considerations *x, y, z . . . n*>."

As an example, Bird points to how certain scientific research communities seem to operate – specifically, *the community of semiconductor physicists*.[4]

Firstly, this community appears to be highly inter-dependent based on a division of labor, epistemic, or otherwise, as a result of both the individual members' and the community's sub-groups being specialized in their research and technical capabilities, as well as their substantive reliance upon each other's specialized knowledge or capabilities in order to carry out their research or to filter it for true contents.

Secondly, this community's results also *often* appear to be propositional outputs, seeing as the "characteristic outcome of their work, whether experimental or theoretical or some combination thereof, is the journal article" – and, in particular, "the leading journals for these physicists are *Physical Review B*, *Journal of Physics: Condensed Matter*, [and] *Electronics Letters*." But they also appear to have such outputs as: "conference presentation[s] or poster[s], or student textbook[s]." Granted, they might also have non-propositional outputs, such as: "new techniques, apparatus, and personal skills." But, as Bird notes, " . . . if techniques and apparatus are also to be contributions to the field as a whole, they will usually be describable propositionally in order to be shared . . . " – even still, his main claim is only that "science does have structures and mechanisms whose characteristic outputs are propositional" (2011, p. 43).

Thirdly, although not always reliable, there are also various truth-filtering mechanisms within this community which tend to be sufficiently reliable for them to socially know that <*p*>.[5] For instance, their experimental or theoretical results undergo peer review through journal submissions and are vetted for their novelty, interest, value, consistency with previous experimental findings, the appropriateness of the methods used to produce them, whether they pass empirical scrutiny, and even whether they pass the test of technical application, as in the design of computer chips and particle accelerators such as the Large Hadron Collider (2011, p. 43–4).

But lastly and relatedly, it also seems right to think that this community makes use of its outputs as inputs for social actions, as the development of more advanced computer chips and the Large Hadron Collider indicates, as well as for social cognitive structures, as the use of their publications for future findings and experiments indicates.

[3]"Functional integration" is a notion that Bird has loosely borrowed from Durkheim (2013 [1893]). For this article, the focus will only be on Bird's conception.

[4]Bird does *not* assume, and neither do I, that being a research community within the social sciences, formal sciences, or the humanities rules that community out for being relevantly similar to semiconductor physicists in terms of the conditions that he has set out.

[5]Following Bird, truth-filtering mechanisms are simply means of determining whether a claim is (or is likely to be) true or false.

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And so, given the conditions which Bird has set out, the community of semiconductor physicists – and whatever communities happen to be relevantly similar to it – would appear to socially know a great deal of things, in addition to whatever other forms of knowledge they might have as well. As Bird explains, this community appears to be *sufficiently functionally integrated* so as to result in their parts' proper functioning (although this functioning is highly dependent upon each other), as well as their overall proper functioning – that is, in its ability to produce and possess social knowledge. Simply put, they seem to have done it.

Given that account, though, this article's interest is *not* in determining whether Bird's account of social knowledge is the correct one. Rather, its interest is in determining whether this *sort* of social knowledge should be and is possessed by *any philosophical communities*. Again, on Bird's account, the key to whether any of philosophy's specialty groups are in a position (or happen) to socially know a great deal of things is in whether they are relevantly similar to a community like that of semiconductor physicists which appears to be *sufficiently functionally integrated* based on the overall proper functioning of their communities in seemingly producing and possessing such knowledge. Ultimately, for the purposes of this article, the focus will primarily be on specialist communities within contemporary analytic philosophy for reasons that will be made clear in Section 4. Moreover, worries about the *reliability* of those communities' truth-filtering mechanisms will be set aside, although such worries can and have been independently raised (see for example Sosa 2011; Kornblith 2013; Katzav and Vaezan 2017; McKeever 2019). Rather, what will be considered is: given the other criteria that Bird sets out and the *best available evidence*, should and are any of contemporary analytic philosophy's specialist communities *functionally integrated enough* to socially know? And, as will be argued, some of them should be, but do not appear to be – at least, as of yet.

2. In favor of specialist philosophical communities' functional integration

With Bird's account and example in mind, then, a start can now be made on discussing whether any of analytic philosophy's specialist communities are sufficiently functionally integrated – which, at first glance, many of them might very well appear to be.

Overall, it is difficult to suggest that there are *strict* divisions of labor within any of its speciality communities. But, as can be seen, there are still various sub-groups (e.g. research groups) and individuals acting in different capacities and discussing shared or related topics. Among the community of analytic epistemologists, for instance, we can see within their various research groups and literature that some of them are trying to distinguish new phenomena, some of them are trying to formulate (or clarify) the questions and answers that are to be (or have been) the focus of discussion, some of them are engaging in dialectic on the available answers to those questions, some of them are systematizing on the basis of popular answers, and some of them have even been doing all of the above. Further, when it comes to the topics discussed, they can also be found to be discussing such related things as: analyses (or conceptions) of different epistemic notions (e.g. knowledge, justification, evidence, and so on), the aims of different epistemic practices, the epistemic norms associated with different epistemic practices, how different practices or methods function, which of those practices or methods are reliable and which are not, how our epistemic virtues or vices might affect our epistemic attitudes or practices, and more. It can also be seen that, for any one of those topics, there is some inter-dependence among the community of analytic epistemologists in their utilization of each other's work – they employ each other's conceptions, they further each other's work, they test the quality of each other's work, they systematize on the basis of each other's work, and

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so on. And, the same can be seen in virtually any speciality community within contemporary analytic philosophy, as their corresponding literature show.

Moreover, we can also see that, within such specialties, there are various truth-filtering mechanisms of the sort that Bird identifies. In the first place, there are general peer review processes for the relevant journals that circulate information within the specialities, as well as out of them, which try to ensure that no "bad" or false information proliferates. Secondly, as Bourget and Chalmers's 2020 PhilPapers Survey (2023) has revealed, different speciality communities have preferred general methods and practices, and have even been wary of some. Thirdly, there are also speciality and inter-speciality conferences where specialists can forward and test the quality of their views with their other specialist colleagues or even with specialists in other areas. Lastly, specialists will also even test whether their views or theories are consistent with the results of other disciplines – for instance, analytic metaphysicians will sometimes check for the consistency of their views or theories with the best research in the physical sciences, and analytic ethicists will sometimes check for the same for their views and theories using the best research in moral or social psychology. And so, in broad scope, it would also seem as if, among the different speciality communities within contemporary analytic philosophy, there are mechanisms for producing and vetting the information that they output.

And lastly, when it comes to their outputs, specialist communities within analytic philosophy also appear to supply a great deal in terms of inputs for other social cognitive structures and even for social actions. When it comes to social actions, we can see that various analytically inclined political, social, and moral philosophers have made several in-roads into the sphere of political, social, and moral action by, for instance, helping to found movements for animal liberation or by practicing field philosophy and trying to ban hydraulic fracking through citizens' initiatives (see Singer 1975; Brister and Frodeman eds. 2020). But, more often than not, when those communities have outputs, they are for other social cognitive structures (including their own). Numerous examples come to mind: philosophical logicians have produced working distinctions and logics for use by computer scientists, linguists, philosophers of language, and so on; social, political, and moral philosophers have produced working distinctions, arguments, and theories for the sake of debates in various domains of public policy; philosophers of mind have produced working distinctions, arguments, and theories for the sake of debates in various domains of neuroscience, cognitive science, and so on; and epistemologists and philosophers of science have done the same for debates in scientific policy, legal policy, economics, sociology, and so on. The list goes on.

3. Against specialist philosophical communities' functional integration

However, despite the *broad* analogy that can be made between them, these communities ultimately exhibit three crucial differences that undermine the analogy's aptness. One involves the sorts of divisions of labor that are prioritized and operating within these communities; another involves the extent to which there is standardization at a community-level on their research backgrounds for evaluating the reproducibility of any subgroup/individual's work and results; and the last involves the extent to which these communities have collective outputs that can be used by other communities for their own social cognitive structures and actions.

3.1. Divisions of labor: convergent vs. parallel interdependence

Divisions of labor come in many varieties and, for different communities, different sorts of divisions will be made based on different priorities. An important dimension of

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divisions of labor, though, is the way and the extent to which communities prioritize (be it implicitly or explicitly) either individual or collective outputs. For instance, while some communities might prioritize and be conducive to divisions of labor that enhance the quality and quantity of individual members' research, others might prioritize and be conducive to divisions of labor that enhance the quality and quantity of collective research. And relatedly, while some communities might prioritize and be conducive to divisions of labor that enhance individual members' research capacities, others might prioritize and be conducive to divisions of labor that enhance the community's total efficiency in producing results.[6]

Now, even from impressions alone, it is hard to suggest that the community of semiconductor physicists and the communities of analytic epistemologists and metaphysicians will be best characterized by the extremes of such prioritizations. For instance, just at the sub-group level, it is hard to find examples of a research group in analytic epistemology or metaphysics that would solely and strictly prioritize individual research publications to the extent that it would not allow its members to write anything but this sort of publication. And equally, it is also hard to find examples of a research group in semiconductor physics that would solely and strictly prioritize efficiency in producing collective research publications, without any thought whatsoever to enhancing individual members' research capabilities or completely side-lining members' individual research. Most plausibly, when it comes to the sorts of communities under discussion, the truth of their prioritizations will fall somewhere in between the extremes and, in that regard, will be fairly complex mixtures of both individual and collective priorities.

And yet, it is still hard to suggest that the community of semiconductor physicists and that of analytic epistemologists and metaphysicians are analogous when it comes to the sorts of divisions of labor that are prioritized and predominately employed.

Different sub-groups within the community of semiconductor physics might very well display different divisions of labor in their specifics, based on the projects undertaken. But overall, when we look over the journals in semiconductor physics that Bird identifies such as *Physical Review B*, *Physica B: Condensed Matter*, *Journal of Physics: Condensed Matter*, and *Electronic Letters,* what cannot be denied is that the *overwhelming majority* of articles are co-authored with anywhere from two to twenty authors, while also incorporating other scholars' work in their references and acknowledgments.[7] So, at the very least, what this suggests is that the community overwhelmingly prioritizes (be it implicitly or explicitly) the production of collective research outputs, rather than individual ones – which makes sense: semiconductor physicists do not seem to have much of a choice, given how difficult it is to produce interesting, empirically supported, and/or theoretically sound results or techniques efficiently and transparently in semiconductor physics on one's own. But going further, what it also suggests is that, in prioritizing collective research outputs, (successful) semiconductor physicists will employ underlying divisions of labor that rely upon *convergent* forms of interdependence, rather than *parallel* forms of interdependence.

With a convergent form, a group will be interdependent in such a way as to have its members' tasks directed towards an integrated collective output for the group, be it sequentially, reciprocally, through pooling, or some combination of the previous. When sequential, an individual member (or a smaller set of members) of a group will have a

[6]For further discussion of trends within the sciences generally, see: Shrum et al. 2007; Bennett and Gadlin 2012; Haeussler & Sauermann 2015; Wagenknecht 2016; & Hall et al. 2018.

[7]As Cronin (2001) notes, even "hyperauthorship" can now be seen. One research output containing numerous semiconductor physicists from the Large Hadron Collider at CERN, for instance, has reached up to 5,154 authors (see Castelvecchi 2015).

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task which, when completed, will amount to a stepping stone for other members' tasks, and so on and so forth, until those tasks are completed and the group has fashioned an integrated collective output. When reciprocal, individual members (or smaller sets of members) will have feedback loops with each other's work which will require them to update/amend and integrate their individual work as they proceed in their own tasks – from there, the group can then fashion their outputs into an integrated collective output. And, when pooling, individual members (or smaller sets of members) will have either similar or different tasks which will, then, have outputs that the group can fashion in order to make an integrated collective output.[8]

With a parallel form, though, a group will be interdependent in such a way as to have its members' tasks directed towards producing or enhancing individual outputs, be it again sequentially, reciprocally, through pooling, or some combination of the previous. When sequential, an individual member of a group will seek to produce their own outputs which, when completed, will enable someone else (or another subgroup/group) to draw on them in order to produce their own outputs. When reciprocal, individual members of a group will have feedback loops with each other's work which will allow them to update/amend their own work, until they are satisfied that they can fashion their own outputs. And, when pooling, individual members will produce their own individual work, be it sequentially, reciprocally, or neither, so that it can then be collected into a nonintegrated collective output for their group.

Now, the cards are already on the table for the community of semiconductor physicists: they seem to have divisions of labor that predominately rely on convergent forms of interdependence, given the sorts of research outputs that they prioritize and tend to produce. But, when it comes to subgroups within a community like that of analytic epistemologists or metaphysicians, they appear to have divisions of labor (if any at all) that predominately rely on parallel forms of interdependence. When we look over the articles from some of the more prominent journals involving analytic epistemology and metaphysics such as *The Philosophical Review*, *Episteme*, *Social Epistemology*, *Erkenntnis, Synthese*, *Oxford Studies in Epistemology*, *Oxford Studies in Metaphysics*, *The Review of Metaphysics*, *Metaphysica*, *Philosophical Studies*, and *Philosophical Quarterly*, what cannot be denied is that the *overwhelming majority* of articles are single-authored, mostly incorporating the contributions from other scholars through references and acknowledgements. So, at the very least, what this suggests is that the community overwhelmingly prioritizes the production of individual research outputs, rather than collective ones. But going further, what it also suggests is that the sorts of divisions of labor that they employ (when they have them at all) are predominately the opposite of what can be found in the community of semiconductor physicists. Otherwise, where are all of the integrated collective outputs? Moreover, if one is not even seeking integrated collective outputs, then why employ convergent forms of interdependence at all? And so, despite initial appearances, there would appear to be a non-negligible difference – especially, when it comes to functional integration – in the *kinds* of divisions of labor that these sorts of communities prioritize and predominately employ.

3.2. Reproducibility: more or less standardization in their research backgrounds

However, another crucial break in the analogy between these sorts of communities is in the extent to which they have more or less *standardization* in their research backgrounds

[8]For further discussion of such forms of interdependence, see: Thomson 1967; & Lawrence & Lorsch 1967.

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for evaluating the *reproducibility* of any subgroup/individual's work and results.[9] Whereas the community of semiconductor physicists has more standardization in its research background, communities like that of analytic epistemologists and metaphysicians have less. Or, to put the matter another way: whereas the community of semiconductor physicists has a more standardized research background from which to engage in what might be called "normal science," the communities of analytic epistemologists and metaphysicians have a less standardized one from which to engage in what might be called "normal philosophy."[10] And overall, when it comes to a community's functional integration, having more standardization in their research backgrounds provides for more stability, interoperability, and what might be called "intra-evaluative coordination" – at least, in the long run – among its subgroups/individuals on the reproducibility of both their work and results.[11]

Importantly, what reproducibility constitutes within these sorts of communities will not always look the same and, further, some of these communities may not even conceive of their practices in terms of it, given what sorts of target outputs they take themselves to be pursuing (e.g. knowledge, understanding truth, justification, and so on). All the same, we can formulate and accept fairly broad conceptions of reproducibility that can be applied to various sorts of epistemic communities. Two in particular come to mind. Firstly, extrapolating from The U.S. National Academies (2019) conception, we can accept that a *basic* reproduction of an original group/individual's means and results (their research, for short) occurs when a different research group/researcher re-creates (or reviews) those means and achieves the same results (cf. The National Academies 2019: 46). And overall, if such a reproduction can be achieved, then the research will be basically reproduc*ible*. But generically, in viewing the communities under discussion as *epistemic communities* concerned with *peer review*, we can also accept a conception that amounts to more than just reproducing the means and results of a group/individual's research, but also corroborating answers to various questions about the presentation, soundness, and significance of a group/individual's research – so, on questions such as:

Presentation

(1) To what extent does this research engage appropriately with the extant literature?
(2) To what extent is it charitable in its assessment of others' research?
(3) To what extent is it transparent in detailing its means and results?

Soundness

(4) To what extent does this research employ the best available means for producing or supporting its results (e.g. the best reasons, data, evidence, arguments, methods/apparatus, theoretical/experimental background, and so on)?

[9]'Reproducibility' and 'replicability' have yet to receive uniform definitions within the various sciences. For the purposes of this article, I will restrict myself to 'reproducibility,' although some conceptions of replicability might overlap with how I will conceive of it momentarily.

[10]By "normal science" and "normal philosophy," I am hearkening to Kuhn (1962) who thought of normal science as the regular work of scientists operating within a stable theoretical/experimental paradigm. I am extending the thought to philosophical communities.

[11]By "intra-evaluative coordination," I am drawing on a distinction, as posed by Gerken (2015) and Dang and Kofi Bright (2021), between *intra*-scientific testimony versus *inter*-scientific testimony. The first involves testimony between collaborating scientists within the same group(s) that are bound by norms of discursive justification, while the second involves testimony aimed at the wider scientific community. For my purposes, I am concerned with something akin to intra-scientific testimony in terms of how collaborating scientists might coordinate on their evaluations of each other's work and results, based on considerations of replication/replicability.

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(5) To what extent are its results supported, locally reproducible, internally consistent, theoretically parsimonious, ontologically parsimonious, externally consistent/unifiable with other work, explanatorily adequate, predictively adequate, solve a problem, and so on?

Significance

(6) To what extent is the research novel?
(7) To what extent is it theoretically or practically fruitful?

Each of these questions sits at the heart of many (if not all) epistemic communities concerned with peer review. And as it seems, when researchers can predominately answer these questions positively, and those answers can be reproduced (i.e. predominately answered positively by others), it would seem that a group/individual's research has been a success.[12]

If anything, one distinction to note between these communities is in the extent to which certain *local types of reproducibility* are prioritized over others. For instance, it is hard to deny that semiconductor physicists prioritize reproducing certain means and results associated with empirical observations, predictions, or practical applications and interventions *over* reproducing certain means and results associated with thought experiments/hypothetical cases, paradoxes, distinctions, or reasons/arguments; whereas for analytic epistemologists and metaphysicians, the opposite seems to hold.[13] But again, for the purposes of this article, it is the difference in the standardization of their research backgrounds when it comes to reproducibility that will be considered, not the types themselves (although this issue will be discussed further in the next section).

Starting with communities like that of analytic epistemologists and metaphysicians, then, what the available evidence suggests about their research backgrounds is that either there are simply not very many positions/frameworks that are standardized or that, if there are any that are standardized, then many analytic epistemologists and metaphysicians simply disagree on them. Drawing on Bourget and Chalmers's 2020 PhilPapers Survey (2023) – which was answered predominately by analytic/anglophone philosophers – it can be seen that there are noticeable differences among epistemologists about some of the most consequential positions/frameworks that might act as a research background for them, including those about:

Epistemic Justification: Accept or Lean Towards Internalism (37.84%), Accept or Lean Towards Externalism (37.35%), Accept or Lean Towards Other Substantive Positions on the Matter (15.97%).

[12]Some peer reviewers and researchers may not be concerned with either of these conceptions of reproducibility. But, insofar as they are not, I take it that they are not concerned with being a member of or having a *constructive* epistemic community.

[13]Although it is hard to define what specific benchmarks (e.g. in terms of what statistical significance must be achieved, what applications must succeed, and so on), there is still widespread acceptance among scientific institutions and communities about what is generally required in practice in order to do productive and effective natural science, including empirical/practical reproducibility. But, for more discussion on the difficulties associated with justifying specific benchmarks, see for example Feyerabend (1988); Bauer (1992); and Hangel and Schickore (2017).

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Source of Knowledge: Accept or Lean Towards Empiricism (35.50%), Accept or Lean Towards Rationalism (31.00%), Accept or Lean Towards Other Substantive Positions on the Matter (14.25%).

Knowledge Claims: Accept or Lean Towards Contextualism (38.44%), Accept or Lean Towards Invariantism (35.84%), Accept or Lean Towards Relativism (4.94%), Accept or Lean Towards Other Substantive Positions on the Matter (10.39%) (see Bourget and Chalmers 2020 Main Survey, AOS Epistemology: https://survey2020.philpeople.org/survey/results/all?aos = 11).[14]

And altogether, of the ten questions related to epistemology, only two have positions/frameworks with support over 75% – External-World Skepticism (Non-Skeptical Realism: 79.93%); and A Priori Knowledge (Yes, there is such knowledge: 75.32%) – and only one has over 65% – Rational Disagreement (Permissivism: 67.2%).[15] The rest of the positions/frameworks within this set of questions all have under 50% support.

With analytic metaphysicians, we can see much of the same in the survey when it comes to questions related specifically to metaphysics, including on:

Causation: Accept or Lean Towards Counterfactual/Difference-Making (26.21%), Accept or Lean Towards Process/Production (22.18%), Accept or Lean Towards Primitive (23.39%), Accept or Lean Towards Non-Existent (2.02%), Accept or Lean Towards Other Substantive Positions on the Matter (13.71%).

Interlevel Metaphysics (Which is the Most Useful?): Accept or Lean Towards Grounding (28.51%), Accept or Lean Towards Identity (9.5%), Accept or Lean Towards Realization (9.92%), Accept or Lean Towards Supervenience (11.98%), Accept or Lean Towards Other Substantive Positions on the Matter (21.48%).

Abstract Objects: Accept of Lean Towards Platonism (50.94%), Accept or Lean Towards Nominalism (28.84%), Accept or Lean Towards Other Substantive Positions on the Matter (10.52%) (see Bourget and Chalmers 2020 Main Survey, AOS Metaphysics: https://survey2020.philpeople.org/survey/results/all?aos = 13).

And altogether, of the twenty-eight questions related to metaphysics, only two questions – Science (Scientific Realism: 78.24%) and True Contradictions (Impossible: 76.54%) – have positions/frameworks with support over 75%.[16] One position/framework – Laws of Nature (Non-Humean: 65.74%) – has over 65% support, and one position/framework – God (Atheism: 61.35%) – has over 60% support. Further, two positions/frameworks – Metaontology (Heavyweight Realism: 55.8%) and Principle of Sufficient Reason (False: 57.26%) – have over 55% support, while six – Abstract Objects

[14]In following Bourget and Chalmers's data, I am excluding those who answered: (agnostic/undecided), (the question is too unclear to answer), (skipped), and (insufficiently familiar with the question).

[15]These questions include those on: A Priori Knowledge; Epistemic Justification; External World; Knowledge; Knowledge Claims; Analysis of Knowledge; Belief or Credence; Justification; Rational Disagreement; and Strongest Response to External World Skepticism.

[16]These questions include those on: Abstract Objects; Free Will; Gender; God; Laws of Nature; Mind; Personal Identity; Race; Science: Teletransporter; Time; Zombies; Arguments for Theism; Causation; Consciousness; Cosmological Fine-Tuning; Interlevel Metaphysics; Material Composition; Metaontology; Possible Worlds; Principle of Sufficient Reason; Properties; Propositions; SpaceTime; Statue and Lump; Temporal Ontology; Time Travel; and True Contradictions.

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(Platonism: 50.94%); Free Will (Compatibilism: 51.62%); Race (Social: 52.27%); Possible Worlds (Abstract: 53.28%); Temporal Ontology (Eternalism: 50.78%); and Time Travel (Metaphysically Possible: 52.96%) – have over 50% support. But, the other sixteen questions all have positions/frameworks with under 50% support.

The issue extends even into such communities' metaphilosophical stances. As Bourget and Chalmers' 2020 PhilPapers Survey (2023) suggests, there are noticeable differences in which stances might be considered apt/right to guide a researcher or research group's work. Among the community of analytic epistemologists, for instance, we can see:

> **Metaphilosophy**: Accept or Lean Towards Naturalism (44.47%), Accept or Lean Towards Non-Naturalism (33.69%), and Accept or Lean Towards Other Substantive Positions on the Matter (2.96%) (see Bourget and Chalmers 2020 Main Survey, AOS Epistemology: https://survey2020.philpeople.org/survey/results/all?aos = 11).

And, among analytic metaphysicians, we can see:

> **Metaphilosophy**: Accept or Lean Towards Naturalism (42.40%), Accept or Lean Towards Non-Naturalism (38.30%), and Accept or Lean Towards Other Substantive Positions on the Matter (2.63%) (see Bourget and Chalmers 2020 Main Survey, AOS Metaphysics: https://survey2020.philpeople.org/survey/results/all?aos = 13).

Minimally, what these findings suggest is that there are safer bets (e.g. naturalistic philosophizing) than others (e.g. non-naturalistic philosophizing) when it comes to which frameworks and which results based on them will be more readily accepted within these communities. But, even with the safer bets, there are no guarantees when it comes to peer review.

Overall, different peer reviewers will have different tendencies when, for instance, one of the previous positions/frameworks is assumed for the sake of either dialectic or speculation: on one end of the spectrum, some might find the soundness of one's arguments in a dialectic or the motivations for one's speculations compromised insofar as they rely on a position/framework which is not widely shared; while on the other end, some might recognize that any position/framework can be assumed and, insofar as it is assumed, the subsequent work and results should be evaluated on their own terms. The issue, though, is that neither end nor point on this spectrum is wholly inappropriate when it comes to evaluating someone's work. If anything, only an argument's validity (if deductive) seems to be standardized and non-negotiable at a community-level within dialectic and internal consistency for speculation. But, whether a premise is accepted as true, whether this reason or set of evidence sufficiently supports a particular premise or claim, how a term should be understood, or whether an argument or conclusion is clear and novel (or even should be), how the different theoretical virtues should be weighed against one another (e.g. external consistency, ontological simplicity, theoretical simplicity, fruitfulness, novelty, explanatory adequacy, and so on), though, would appear to be subject to a great deal of discretion – there are substantive disagreements within standing literatures devoted to determining such things (for illustration, see Cappelen 2012; Davis 2022; Mizrahi 2022; Nagel 2013; Schindler 2022; Whitehead 1968).[17]

[17]Rescher (1985) presents a similar point – except, he uses it to support a form of pluralism within the discipline as a whole.

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In contrast, the differences with the community of semiconductor physicists are stark. Much more is communally and explicitly standardized when it comes to their research backgrounds, even if there may not be any agreement on why those research backgrounds are ultimately justified (cf. Dang 2019). Theoretically, there are numerous mathematical theorems and tools to build upon including from calculus, linear algebra, and complex analysis, as well as scientific laws and theorems to build upon including quantum mechanical laws, Floquet's Theorem, Bloch's Theorem, Miller's Theorem, the Shockley–Ramo Theorem, Reciprocity Theorems, and so on. There are also numerous standing experimental findings to draw upon, including the Lazarus Effect, the Quantum Hall Effect, Franz–Keldysh Effect, Nernst and Ettingshausen Effects, Shubnikov–De Haas Effect, De Haas–Van Alphen Effect, and so on (see Philips 2012; Sze et al., 2021). In methods, there is also a great deal of explicit standardization at various levels. Names, symbols, definitions, conversion factors, and units for quantities are explicitly standardized (see ISO 80000-12: 2019). And, numerous metrological, experimental, and fabrication techniques and devices are also explicitly standardized (see ed. Diebold 2001; Schroder 2006; Patané and Balkan 2012; Orji et al. 2018).

To remind, the thought is not that there are no explicitly standardized laws, theorems, or methods within the communities of analytic epistemologists and metaphysicians, as perhaps metaphysical laws such as Leibniz's Law, Non-Contradiction, Identity, and Excluded Middle, *proven* logical metatheorems such as Gödel's Incompleteness Theorems or the Löwenheim–Skolem Theorem, or the methods of conceptual analysis and formal analysis might be. It is just that there are many more – in fact, too many to detail here in depth – that are standardized within the community of semiconductor physicists.

Of course, peer reviewers' evaluations need not follow from actually reproducing all of another's work and results, so much as merely evaluating their plausibility in light of what can be readily reproduced or rests in the research's background.[18] But, the point is that, with more standardized research backgrounds, there are clearer and more stable grounds for substantiating either a rejection or acceptance of another's work and results. And, even once published, both the work and results are then also subject to evaluation by others through their circulation and use in other projects – reproducibility must still hold. Where a researcher/research group builds upon another's work or results or is merely trying to reproduce them, and neither turns out to be reproducible, negative intra-evaluative coordination can take effect: the community's research background can be drawn upon in order to substantiate a lack of reproducibility and which can then induce the community to coordinate accordingly. Alternatively, if all goes well, both positive interoperability and intra-evaluative coordination can take effect: that is, the community can then be induced to coordinate so as to admit the substantiated work and results, as well as make use of them for other projects.

3.3. Inputs for others' social structures and actions: individual vs. collective outputs

The last difference that I will note is that, although communities like that of analytic epistemologists and metaphysicians have inputs for the sake of other social cognitive

[18]Some would claim that there is a "crisis" associated with whether scientists, in fact, replicate many of their results – see for example Baker (2016); & Atmanspacher & Maasen (2016). But, crisis or not, it is at the very least accepted that productive and effective natural sciences should be replicable – see for example Collins (1985); Freedman et al. (2015); Atmanspacher & Maasen (2016); & National Academies of Sciences, Engineering, and Medicine (2019).

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structures and even for social actions, they are largely not based in collective outputs, so much as outputs from either standalone individuals or subgroups. Already, in section 3.1, this could be seen in the preponderance of single-authored published research within the journals associated with those communities. But, even looking beyond those communities, we can also look to more sociopolitically inclined specialist philosophical communities, such as analytic sociopolitical philosophers, and see a preponderance of solo work, including Singer's previously mentioned work, Sen (1999) and Nussabaum's (2011) independent work on capability approaches to welfare, Sandel's (2020) work on meritocracy, Táíwò's (2022a; and 2022b) works on reparations and elite capture, and so on. In fact, looking back to Section 2, it now seems as if Brister and Frodeman (eds. 2020) work is more of an exception, rather than the rule, when it comes to providing inputs for other social structures and social actions.

In contrast, the community of semiconductor physicists has predominately provided collective outputs, as the journals pinpointed by Bird indicate. Their work is also unquestionably significant in terms of laying foundations for the development of semiconductor devices within grand scientific projects like the Large Hadron Collider, as well as the development of ever more sophisticated electronics. So, if the proof is in the pudding *and* their having it together, then to all appearances the community of semiconductor physicists eats well – unlike the communities of analytic epistemologists, metaphysicians, and socio-political philosophers.

4. Outstanding questions and replies

And so, although it can be granted that analytic philosophy's specialist communities might seem to be functionally integrated in a way that is akin to the community of semiconductor physicists, there are at least three substantive differences that support thinking otherwise. But, with that case now made, the next step is to situate the significance of this breakdown in the analogy – as some might still question: (1) Why focus in the first place on Bird's Minimal Functional Account of social knowledge over others? (2) Why focus on specialist communities within contemporary analytic philosophy for discussion – particularly, epistemologists, and metaphysicians? (3) Might appeals to reproducibility simply rule out non-empirical disciplines for functional integration in the first place? And, (4) why focus on standardization and not the types of reproducibility involved in these communities?

4.1. Why the focus on bird's Minimal Functional Account of social knowledge?

The focus on Bird's account is motivated by two aspects of the existing literature. Primarily, it is due to his account's being prominent and similar to a number of other Non-Summativist views of social knowledge which also require something like sufficient functional integration, interaction, or organization among a group's members in order for the group to be in a position (or to happen) to socially know. In particular, we can think of such accounts as: Wray's (2007) Organic Solidarity Account which requires that a group have sufficient functional dependence (or organic solidarity) in order for it to have social knowledge; and Fagan's (2011) Interactive Account of social knowledge which requires that a group's members have working functional connections between their epistemic activities in order for it to have social knowledge. Unfortunately, none of these accounts (including Bird's, as we have seen) clearly set out a threshold or a specific set of criteria for when exactly these requirements are met. But, for each of these accounts, the thought is that they broadly suggest conditions for collective epistemic success based on the makeup of certain communities – such as the community of

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semiconductor physicists – which seem to typically result in those forms of success. And, where communities do not seem to be relevantly similar to those sorts of successful communities both generally and specifically, then not only will they likely not be as successful, but more likely than not they will also fail to pass muster in terms of functional integration, organic solidarity, or working functional interactions.

Secondly, focusing on Bird's account also seems appropriate because it is one of the least stringent views available for a Non-Summativist form of social knowledge, unlike accounts such as Gilbert's (2014) Joint Commitment Account, Schmitt's (1994) Joint Acceptance Account, and other nearby accounts such as can be found in Hakli (2011), Palermos (2022), Rolin (2010), Tollefsen (2004), and Tuomela (2013). Ultimately, these accounts are not going to be satisfied by many groups in virtue of their views' requiring that *all of the group's members* (or even a *supermajority* or *majority*) jointly accept or be jointly committed to something irreducibly collective in content (e.g. "we believe p," "we value x," "we fulfill our promises," and so on), and the fact that many groups (especially analytic philosophers within their own specialties) do not appear to satisfy such stringent conditions in light of the best available evidence.

But, it stands reminding: it is still an open question whether accounts of social knowledge like Bird's are correct or the only available sort. Again, other authors have offered various alternative Summativist accounts. And, if these accounts are competing, as some of their proponents might maintain, then it might very well be the case that philosophy's specialties need not be concerned that they do not satisfy Bird-like accounts since they simply might be mistaken. But, if it turns out that something like Bird's account is correct, then even still it might be the case that such accounts only pick out one type of social knowledge among several. And, although analytic philosophy's specialist communities do not seem to satisfy accounts like his own, perhaps, they might satisfy others, such as Lackey's (2016 and 2020) Group Epistemic Agent Account. Future work will hopefully tell.

4.2. Why the focus on specialist communities within contemporary analytic philosophy?

As I mentioned in my introduction, my focus on certain specialist groups within contemporary analytic philosophy – in particular, analytic epistemologists and metaphysicians – is not without justification. There are, at least, four reasons for it. Firstly, it is because, if any sort of specialist philosophical communities (broadly-speaking) might be akin to specialist scientific communities, it will likely be those within analytic philosophy, seeing as many within this tradition have conceived of it as either scientific or quasi-scientific and not or, at least, not *just* as a discipline within the humanities (in line for instance with Quine 1969, 1995; Spohn 2005; Williamson 2017, 2021).

Secondly, analytic philosophical works are increasingly becoming more collaborative in a way that is reminiscent of scientific works. Minimally, this is suggested by the data from Bourget et al. (2021) which has shown, based on the analytically-inclined PhilPapers database, a marked increase in collaboration and co-authorship within analytic philosophy over the past 120 years of publications. Now, maybe, this is intentional; maybe, it is not. Regardless, the thought is that, if any sorts of philosophical communities have a good chance at being analogous in its spirit of collaboration to a community like that of semiconductor physicists, it will be some of their communities.

Thirdly, in line with the first point that I have made, many within analytic specialist philosophical communities have been concerned with possessing various epistemic goods – both social and individual – in answering the questions that they have

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considered and equally with providing them to others.[19] Some of them are already concerned with the extent to which they can and do possess one or another form of social knowledge because they worry about their ability to demonstrate the *collective* epistemic progress of their discipline (see Gutting 2009, 2016; Chalmers 2015). But, even if they are not already concerned, a case can be made for why they should be: because, if they happen to fail to achieve any individual epistemic goods (which might also follow from their not being able to secure social ones, as Kornblith 2013 suggests), then at the very least they might seek and be able to acquire social ones which others might be able to draw upon – especially, those who doubt the discipline's ability to provide anything like epistemically sound answers to the questions that have been considered.[20]

And lastly, the focus on the communities of analytic epistemologists and metaphysicians in particular is ultimately benign. Many analytic epistemologists and metaphysicians (as well as a number of others in other specialist analytic communities) have engaged in both dialectic and speculation for the sake of achieving various epistemic goods. But, in terms of how these activities proceed within these communities, I have found that metaphysicians provide for more ready examples of speculation, while epistemologists provide for more ready examples of dialectic. I am also most familiar with these communities. But, for either of the two, they could have easily been substituted with any other specialist analytic philosophical community and the same results would follow.

4.3. Are non-empirical disciplines ruled out by considerations of reproducibility?

I maintained broad construals of reproducibility in order for them to be applicable to any epistemic community. In part, I could not see a reason for why those construals could not be as broad as I made them. But equally, if they were not as broad, then non-empirical and non-practical (or predominately non-empirical and non-practical) disciplines, such as pure mathematics (unlike applied mathematics), would be ruled out for functional integration from the start. But, this does not seem correct.

In light of their standardized topic- and/or practice-specific research backgrounds – as well as *standardized* conceptions of proof at their community levels – different pure mathematical communities also seem to be in a position to be sufficiently functionally integrated and thus in a position to socially know, without any need for empirically – or practically – involved types of reproducibility. Of course, for the sake of sufficient functional integration, these communities will also need to be sufficiently reliable, and there might be issues on this front (see for example: Geist, Löwe, & Van Kerkhove 2010; Frans and Kosolosky 2014). And equally, it might also be less than clear what particular conception(s) of proof tie all the different research backgrounds within different mathematical topics or practices together (see for example: Rav 2007; Dawkins and Weber 2017; Tanswell 2018). But, within the literature, the predominant view is that such communities have standardized research backgrounds and conceptions of proof at the community-level which provide for a good amount of reproducibility (see for example: Azzouni 2004; Detlefsen 2008; Marfori 2010; Burgess 2015).[21] Granted, more

[19]For support, see again Bourget and Chalmers PhilPapers 2020 Survey (2023) on the aims of philosophy.

[20]See for example: Krauss (2012); Hossenfelder (2016); Hardwick and deGrasse Tyson (2017); and Williams (2018).

[21]There are empirical challenges to this claim – Inglis, Mejia-Ramos, Weber, and Alcock (2013), for instance, have questioned such standardization when it comes to the community of both pure and applied mathematicians. But, these challenges are still nascent and have yet to determine to what extent applied mathematicians have different methods of proof amongst themselves, to what extent this might hold between pure mathematicians, and whether differences in mathematical topic might also be significant.

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work is needed in order to substantiate this view empirically. But, as it seems, there might very well be good grounds for denying that something like empirical/practical types of reproducibility are ultimately what make the difference between this or that community's functional integration.

4.4. Why focus on standardization and not the types of reproducibility at play?

More broadly, it also does not seem as if the extent to which certain types of reproducibility matter for a community's functional integration can be determined, insofar as some degree of standardization on their research backgrounds is necessary and its variation in different communities muddies the waters. Regarding whether it is necessary, the following might be considered: if there were a community that has no standardization on its research backgrounds and methods, but its sub-groups/individuals can largely have their results reproduced (so are functional), then standardization would not be necessary for functional integration. However, at the very least, a community's functional integration must be tied to *some* sort of target output in order for the *functionality* of the community to be made sense of and gauged. This could be reproducibility or not. But, insofar as some target output must constitute a measure of functionality, there must also be some standardization (be it implicit or explicit) regarding either the community's target outputs or those held for its different subgroups/individuals. If they are implicit and can provide for reproducibility, then arguably making them explicit (and getting them right) will only increase reproducibility within a community. If anything, what can be easily accepted is that standardization is not sufficient for a community's functional integration, seeing as what is standardized can end up being completely wrong. And so, there are clearly going to be certain types of reproducibility that are better than others in terms of functional integration. But, given the sorts of communities under discussion (and all other research communities for that matter), we are currently incapable of isolating for the adequacy of this or that type of reproducibility because we are currently incapable of controlling for a community's standardization. And, until we are capable, tying functional integration to this or that type of reproducibility will be tenuous at best.

5. Conclusion

When it comes to the sort of social knowledge that accounts like Bird's Minimal Functional Account pick out, then, it would seem as if it is not possessed *as of yet* by philosophical communities.[22] But, there are still several caveats to keep in mind even if that sort of knowledge seems currently beyond them.

Firstly, as has been suggested by Hiller and Randall (2022), Bird-like forms of social knowledge might not require as much functional integration as is displayed by communities like that of semiconductor physicists – and thus, some specialist philosophical communities might still have Bird-like social knowledge. However, although this is certainly a conceptual possibility that can be granted, what needs to be shown (according to them) is whether the intended functions of the groups are different and why one, rather than the other, can admit of a looser form of functional integration in light of their function. I have cast their intended functions in terms of replicability, albeit involving different types. But, regardless of this difference, it still seems a difficult

[22]This suggestion and the arguments for it are novel, but they follow from a long line of worries from philosophers about whether or not they possess various epistemic goods, let alone progress. See for example Kornblith (2010; and 2013); Goldberg (2013); Chalmers (2015); and Lycan (2019), among others.

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case to deny that the differences that have been identified would not be required to some degree within complex epistemic communities.

Secondly and relatedly, though, more functional integration is always a live possibility for any philosophical community. They can straightforwardly begin to transition to more convergent divisions of labor and/or they can begin to more explicitly standardize their theoretical backgrounds and methods so as to enhance the interoperability and intra-evaluative coordination on their work and results. These are simple suggestions, but if the community of semiconductor physicists does, in fact, have the sort of social knowledge that accounts like Bird's pick out and some philosophical communities desire (or should desire) such knowledge, but cannot possess it because of a lack of functional integration, then so it seems, an obvious solution is for the second set of specialties to simply be more like the first set in the extent to which they are functionally integrated (for a similar suggestion, see Willliamson 2021). That said, though, there will still be the question of whether any potentially standardized truth-filtering mechanisms within such communities will be reliable enough or can be made to be so.

Alternatively, perhaps, analytic philosophers who view philosophy as a scientific/quasi-scientific discipline are simply mistaken. Numerous claims to this effect have been made (see Williams 2006; Friedland 2012; and Cherry 2012). And, in a sense, the suggestions made in this article might be taken to support it. However, given the previous caveat, it is still too early to tell. If analytic philosophical communities can manage to functionally integrate, then perhaps, a clearer picture will begin to emerge as to whether they are right or wrong in their self-conception. But, even still, philosophy is a historically dynamic discipline that is largely subject to the many directions of its practitioners and it need not be unified in the make-up of its practitioners and communities. So, where a philosopher or philosophical community is seeking other sorts of goods or has a different conception of the discipline, then they need not be perturbed by this article's result.

Lastly, it also stands emphasizing that this article's result is based on the ***best available evidence*** of how communities like that of semiconductor physicists and analytic philosophical specialists seem to operate. Journals, surveys, textbooks, and meta-analyses of them have all been drawn upon in order to support various generalizations about both sorts of communities. As it stands, though, this area of research – the sociology of philosophy – is still quite nascent in comparison to the standing literature within the sociology of science and the growing literature on the sociology of mathematics. So, based on the previous discussion, what has resulted might very well be tentative. But all the same: until further evidence is presented, it would seem that, according to Bird-like Non-Summativist accounts, philosophers are ultimately not functionally integrated enough to socially know as of yet.

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